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RE-DEFINING THE "RADIO OPERATOR":

HONING AFSOF'S EDGE FOR THE JOINT IW FIGHT

by

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Biography

Lieutenant Colonel John D. Cline graduated from the University of Tampa in 1990 earning his commission as a distinguished graduate in the Reserve Officer Training Corps and has spent his entire flying career in MC-130P COMBAT SHADOWs. He is a Distinguished Graduate of both the Naval Postgraduate School Special Operations and Low Intensity Conflict Program and the Naval War College Command and Staff Extension Program. In 2007 he was the #1 graduate of 3,262 students in the Air War College Distance Learning Program. Lt Col Cline flew missions in the opening phases of Operations ENDURING FREEDOM and IRAQI FREEDOM, served as the deployed squadron commander for MC-130P operations in Iraq in 2008, and as the deployed Group Commander for joint SOF aviation assets in Iraq in 2009. Prior to assuming his current assignment, Lieutenant Colonel Cline served as Commander of the 9th Special Operations Squadron at Eglin AFB, Florida.

Introduction

The purpose of this paper is to clearly demonstrate the urgent need for dedicated airborne communications expertise throughout the Air Force Special Operations Forces (AFSOF) enterprise and to propose a comprehensive solution to that need. This need is driven by an enduring Irregular Warfare-focused (IW) strategic environment and an increasingly net-centric operational environment that sustain pressing airborne communications standardization, integration, and interoperability requirements. This paper's primary argument is that the Airborne Mission Systems Specialist (AMSS, aka "Radio Operator") skillset is a critical component for sustained AFSOF success in these strategic and operational environments, and thus AFSOC must reorganize its AMSS cadre into centrally controlled pools to provide standardized net-centric communications integration and interoperability capability to all of its maneuver elements and staff agencies worldwide. The wide-ranging strategic impact of re-defining the AMSS' role in AFSOC is universally decreased risk of mission failure, particularly on short-notice, "no-fail" national-level IW taskings.

The paper will support this finding in five steps. First, it will present background information on how AFSOC's current recapitalization efforts are making the AMSS skillset a "use it or lose it" capability within the Command. Second, it will draw on higher headquarters (HHQ) guidance to elaborate on the nature of the strategic IW environment AFSOF faces as it expands and recapitalizes. Third, it will review the key elements of the operational IW environment defined by increasing reliance on net-centric joint communications architecture. Fourth, it will provide real-world examples of the mission-critical capability the AMSS currently brings to AFSOF, and compare the very limited role the AMSS plays in AFSOC to the much broader roles the AMSS plays in other Air Force units. Finally, it will draw on tenets of classic

organizational and systems design theory to evaluate various approaches AFSOC could take to fill its need for worldwide dedicated airborne communications expertise. In the end this paper will prove that the best solution is to re-define and expand the AMSS' role in AFSOC from one of a simple "Radio Operator" tied to a specific platform to that of a centrally managed airborne mission information manager providing "as needed" tactical communications support aboard select AFSOF platforms, and "full time" standardized net-centric communications integration and interoperability expertise to all AFSOF deployable elements and HHQ staff agencies.

Background

DoD, JCS, SOCOM, and Service guidance on joint IW operations paint an enduring strategic environment where modular, "scalable" forces (flexible elements able to quickly integrate with joint and combined players in ad hoc task forces) are at an absolute premium.[1] Mastery of current and future net-centric joint airborne communications architecture is critical for AFSOF's operational success in this strategic IW environment. By eliminating the AMSS from the crew compliment of all AFSOC aircraft, the MAJCOM's robust recapitalization effort is creating a command-wide gap in dedicated airborne communications expertise at precisely the wrong time: As that expertise is becoming more and more critical to success in no-fail joint/combined IW operations.

Due to an expanding cast of potential partners and the ever increasing complexity of net-centric joint airborne communications networks, AFSOC must re-organize its AMSS career field to maximize AFSOF's ability to rapidly "plug-and-play" with SOF and general purpose forces (GPF) partners worldwide across the range of military operations envisioned in JCS, SOCOM, and Service IW operating concepts. This research shows that the best way to organize and employ the AMSS throughout AFSOC is from Airborne Communications Flights assigned to the

Operational Support Squadrons (OSS) at all CONUS and overseas Special Operations Groups (SOGs). If AFSOC fails to reorganize its AMSS cadre, then the entire active duty AMSS career field will exit the Command upon the retirement of the last MC-130P airframe in 2017.

The Strategic Environment: Everyone Does IW

The 2006 Quadrennial Defense Review (QDR) highlighted that U.S. forces were overinvested in capabilities to counter regular threats and underinvested in capabilities to counter irregular threats. The document therefore codified an overt national commitment to re-orienting and re-shaping all the armed services to focus on irregular warfare.[2] Secretary Gates recently re-affirmed the national IW commitment proffered in the 2006 QDR and the 2008 National Defense Strategy by stating "The [Defense] Department's irregular warfare vision is to equip the joint force with capabilities, doctrine, organization, training, leadership, and operating concepts needed to make it as proficient in irregular warfare as it is in conventional warfare."[3]

The JCS refined the operational ramifications of this guidance in its 2009 Capstone Concept for Joint Operations (CCJO). The CCJO articulates the Chairman's broad vision for the employment of the joint force circa 2016-2028, and one of its ten "Common Operating Precepts" is to "maintain operational and organizational flexibility":[4]

> "Future challenges will require a rapidly scalable and organizationally flexible joint force. Technology and training increasingly are permitting the empowerment and autonomous employment of much smaller and widely dispersed tactical formations. Based on an underlying modular structure down to small unit levels, joint forces will routinely and smoothly aggregate and disaggregate into temporary joint formations of differing sizes depending on the nature and scale of operations. They will also similarly

combine elements of different services and even other agencies and international partners as required."[5]

Therefore, because "the decentralized nature and organizational structure of irregular threats demands versatile and agile joint forces and organizations that are able to adapt to the complexity of the threat,"[6] the DoD must "devise force generation and allocation systems that enable scalable, integrated, distributed operations by general purpose and special operations forces."[7]

The "so what" in this information on the strategic environment is that it means not only that AFSOF are even more likely to be thrust into short-notice ad hoc task forces, but also that AFSOF will be integrated with an expanded cast of potential partners extending far beyond the traditional joint SOF brethren with whom it regularly trains (see the CENTCOM CT surge example below for a great recent example of this dynamic). This in turn means that the standardization, integration, and interoperability of joint airborne communications systems must be a primary focus for AFSOF if it is to field tailored tactical and operational elements with the instant plug-and-play modularity required to be effective when working with non-habitual partner units on time-critical no-fail IW missions.

The Operational Environment: Net-centric Joint Comms "Drive the Bus"

To be effective in the enduring IW strategic environment and fulfill HHQ requirements for rapid interoperability among modular force packages, AFSOF must internally develop and consistently field masters of current and future joint airborne communications architecture all the way down to the smallest tactical element. This architecture is rapidly expanding in complexity as the services strive to comply with the net-centric vision espoused by Secretary Gates in the

2009 Quadrennial Roles and Missions Report. One of nine "core competencies" of the Joint Force, "net-centric" refers to:

> "The ability to provide a framework for full human and technical connectivity and interoperability that allows all Defense Department users and mission partners to share the information they need, when they need it, in a form they can understand and act on with confidence…"[8]

In an operational sense, perhaps the greatest manifestation of this net-centric vision lies in the airborne communications arena. The Joint Tactical Radio System (JTRS) is a DoD-wide multi-billion dollar program of record that is focused on "stitching together the ground and air environments" in any given battlespace.[9] The program's goal is to provide a singular joint communications network architecture "that empowers the soldier, sailor, airman, or marine regardless of his service or combat platform."[10] The transformational technology at the heart of JTRS revolves around "software defined radios" (SDRs). SDRs not only allow the integration of legacy airborne voice and data communications networks (HF, UHF, VHF, SATCOM, HPW, SINCGARS, and the entire family of wideband ISR and Link 16 situational awareness datalinks), but also enables completely new internet protocol-based wideband networking waveforms that "will pass data, voice, and video simultaneously at a throughput rate that is orders of magnitude faster than legacy waveforms."[11]

Despite a troubled history of cost overruns and internal restructuring, the JTRS program is finally delivering actual hardware for ground and air use. Ground-based elements of JTRS have deployed with Army Brigade Combat Teams (BCTs) to Iraq and Afghanistan.[12] Airborne elements of JTRS have completed flight testing on AH-64Ds and F/A-18E/Fs, and will soon be integrated into E-8 JSTARS, RC-135 Rivet Joint, EC-130H Compass Call, and EC-130E Senior

Scout platforms.[13] AFSOC's current plan is to begin fleetwide JTRS installation on AC-130U/Js and MC-130H/Js in 2014 (AC-130Us and MC-130Hs as retrofit modifications, and on AC/MC-130Js as they come off the production line), and to begin fleetwide JTRS installation on CV-22s beginning in 2018.[14]

The "so what" in this information on the net-centric operational environment is that JTRS is here to stay, and that mastering its unique capabilities down to the lowest tactical level will be key to AFSOF's combat effectiveness on future battlefields. JTRS embodies a vast increase in both the complexity and capability of airborne communications networks, therefore the standardization, integration, and fielding of JTRS-related capabilities throughout AFSOC will be a very complex long-term endeavor. Much as the increasing complexity and capability of Command and Control (C2) tools led AFSOC to invest heavily in specialized mission information manager (MIM) expertise, the increasing complexity and capability of joint airborne communications architecture embodied in JTRS requires AFSOC to make a similar long-term effort to provide specialized airborne communications expertise throughout the Command. This need is even more urgent during transition to JTRS-based systems to ensure continued joint interoperability as each service and SOCOM component completes their transition to JTRS-based systems at different rates.

The AMSS Skillset in AFSOC and Elsewhere

The mere existence of the AMSS Air Force Specialty Code (1A3X1) confirms that the U.S. Air Force has validated the concept that the "care and feeding" of current airborne communications architecture is sufficiently complex and mission-critical as to justify dedicated expertise. Independent historical developments (MC-130E move to the Air Force reserves, and AC-130H/U/J, MC-130H/W/J, CV-22, and U-28 crew-compliment design) have left all of the

current active duty AMSS expertise in AFSOC tied to a single platform (the MC-130P), and will therefore exit the command upon the retirement of the last Combat Shadow I in 2017. Despite core technical training in a broad range of airborne networking, electronic warfare, space systems, and in-flight maintenance areas,[15] the role of the AMSS aboard the MC-130P has traditionally been limited to one of a "radio operator" focused on the conduct of mission C2 voice transmissions and on the upkeep of aircraft secure voice communications hardware and software. In AFSOC's own words, the AMSS "is not associated with the wide range of capabilities they currently have," rather they "are generally construed only as airborne radio operators with no other applicable skillset."[16]

Though historically employed by AFSOC in this relatively narrow role, the AMSS has nevertheless proven critical to tactical and operational success on complex, high-risk/high-reward missions across the globe. The following recent real-world examples illustrate the type of pivotal capability the AMSS brings to the current fight. These examples will then inform a comparison of the limited role the AMSS currently plays in AFSOC to the much broader roles the AMSS plays in other Air Force units. From this comparison the paper will synthesize its final recommendation.

In late 2009 the 9 SOS surged a three aircraft package to the CENTCOM AOR for a short-notice, no-fail national-level counter-terrorism (CT) mission. Upon arrival at the forward operating location, the MC-130P crews were immediately immersed in detailed planning with other AFSOF and joint SOF air and ground partners for a complex full mission rehearsal to be conducted within 36 hours. Two unexpected communications issues quickly became "go/no-go" items: First, ground SOF users required full high performance waveform (HPW) data network connectivity on all the MC-130Ps. Second, the SOF aviation element required communications

integration with non-standard ISR platforms as well as land and sea-based U.S. Marine Corps fixed and rotary-wing assets. Among all the joint SOF communications capabilities assembled in the mission task force, the AMSSs resident in the MC-130P aircrews proved to be the only element able to work the urgent internal and external communications issues on the required timeline.

Having the AMSSs available to tend to the "nuts and bolts" elements of the mission's tactical and operational communications requirements allowed other crew members to focus on mission-critical tactical employment details in the extremely time-constrained preparation timeline. In the end, the success of this very complex high-risk/high-reward mission was hailed by the SECDEF as a template for future "global pursuit" CT operations. As the AFSOF mission commander within the joint SOF task force, the author emphatically submits that having AMSS capability at hand was pivotal to the success of this no-fail mission.

Such strong AMSS advocacy does not stand alone. Squadron commanders outside the MC-130P community have recognized the real-world value of AMSS expertise as well. Lt Col Dave Diehl (former Commander of the 15 SOS) and Lt Col Brenda Cartier (former Commander of the 4 SOS) advocated for "as needed" access to tactical-level AMSS expertise onboard their MC-130H and AC-130U aircraft respectively. As the AFSOF mission commander for a high-visibility Joint Readiness Exercise (JRX), Lt Col Diehl also saw the mission-critical value of AMSS expertise at the operational planning/integration level as well.

In early 2010 Lt Col Diehl (then the sitting Commander of the 15 SOS) led an AFSOF element of AC-130Us, MC-130Hs, MC-130Ps, and U-28As assigned to participate in the JRX with the 75th Ranger Regiment. As in the aforementioned CENTCOM CT surge example, AMSS expertise proved mission-critical. Once again, an extremely time-compressed planning

effort uncovered an unexpected ground user requirement for HPW data network connectivity on all the MC-130s and U-28s (the AC-130s were already HPW capable). According to Lt Col Diehl, the AMSS expertise resident in his MC-130P aircrews and his 1 SOW/XP planning staff was pivotal to success because they were the only subject matter experts (SMEs) available who could complete HPW integration between MC-130Ps, MC-130Hs, U-28As, the joint operations center (JOC), and the Ranger ground maneuver element in the short time available before execution of the complex airfield seizure scenario.[17]

Given these examples of the utility of the AMSS skillset within AFSOC, it is useful now to look at how the AMSS is employed outside of AFSOC. In addition to AFSOC's active duty MC-130Ps (and reserve component MC-130Es and EC-130Js), the AMSS is integral to the crew-compliment of all E-3 AWACS variants (including NATO AWACS), all RC-135 variants, all E-8 JSTARS variants, all EC-130E/H Senior Scout/Hunter/Compass Call variants, the E-4B National Airborne Operations Center, the OC-135B Open Skies variant, the YAL-1 airborne laser, VC-25, C-20, C-32, C-37A, C-40B/C, C-135 Speckle Trout, and most recently the MC-12 Liberty.[18]

AMSSs perform a dizzying array of duties aboard these diverse platforms, to include operating, configuring, testing, troubleshooting, isolating, and repairing various airborne and selected ground communications and computer systems equipment.[19] In addition, AMSSs are knowledgeable on Air Tasking Order (ATO)/special instructions (SPINS), joint communications execution operating instructions (JCEOIs), execution checklist, authentication, encode/decode document, 9-, 11-, and 15-line procedures, as well as aircraft navigation fundamentals.[20] On some platforms AMSSs serve as airborne "gateway mangers" to the global information grid (GIG). Furthermore, within Air Mobility Command they are trained on specialized deployable

C4I packages and assigned to various Operations Group-level units for "as needed" duties aboard KC-10A, C-130E, and C-17A platforms.[21] It is from these last two roles (airborne GIG manager and "as needed" C4I support), combined with AFSOC's current centrally managed employment construct for direct support operators (DSOs), that this paper models its recommendation for the future employment of the AMSS in AFSOC.

How Should AFSOC's AMSS Cadre Be Organized and Employed? – PART 1

This paper's contention throughout has been that AFSOC must re-define and expand the AMSS' role from one of a simple "Radio Operator" to that of a centrally-managed joint airborne communications architecture SME. The next two sections will show how this contention is solidly backed by tenets of classic organizational and systems design theory.

Perhaps the best way to begin the detailed discussion on how to fill AFSOC's requirements for airborne communications expertise is to first show *how not to do it.* This section will begin with a review of three main organizational and systems design theory concepts applicable to the discussion. This review of key concepts will then inform evaluations of the shortcomings in three alternative approaches for filling AFSOC's requirements for airborne communications expertise that are being considered by various elements of the AFSOC staff. The following section will then apply the same key concepts to specifically justify why the best way to fulfill AFSOC's need for airborne communications expertise is to organize and employ the AMSS throughout command from centrally managed "pools" within the OSS at each CONUS and overseas SOG.

The first major concept is "differentiation". At its most basic level, organizational theory is about "differentiation" and "integration". "Differentiation" refers to the ways and mechanisms used to divide effort/labor in to manageable pieces. "Integration" refers to the ways and

mechanisms used to re-combine all the divided efforts into a useable whole.[22] The differentiation side of the equation (division of labor) "is without doubt the most important pillar of classical organization theory."[23] Based on the primacy of differentiation, organizational theory makes it clear that flawed differentiation severely complicates efforts at integration, and therefore most often leads to a flawed overall product. "Differentiation error" occurs when two or more distinctly different tasks are combined into a single organizational unit or function.[24] A further applicable truism of general organizational theory holds that with increasing complexity of any given task comes increased specialization and professionalization in the workforce assigned to carry it out.[25] Therefore, avoiding differentiation error involves devoting attention to the particulars of "specialization" and "professionalization". "Specialization" is the degree to which organizational tasks are subdivided into separate jobs [similar to division of labor above].[26] "Professionalization" refers to the increasing levels of formal education and training associated with increasingly complex tasks.[27] When applied against the increasingly complex nature of joint airborne communications architecture, this principle tends to support movement towards specialized, professionalized airborne communications expertise. As stated before, the mere existence of the AMSS career field confirms that the U.S. Air Force has already reached this conclusion in regards to current airborne communications architecture.

A very pertinent historical example of "differentiation error" among aircrew specialties cost General George Kenney his job as the first commander of Strategic Air Command (SAC). In an effort to "make do" with chronic shortages in manpower, General Kenney's deputy, Lt Gen Clements McMullen, instituted an aggressive "cross-training" program whereby all flying officers were qualified in multiple crew positions. "Pilots learn[ed] to perform the duties of both navigators and bombardiers, and vice versa."[28] In early 1948 General Lauris Norstad, the Air

Force Deputy Chief of staff for Operations, sent two very famous aviators to SAC headquarters to conduct a readiness assessment.[29] Brigadier Generals Charles Lindbergh (of solo across the Atlantic fame) and Paul Tibbets (of Enola Gay/Hiroshima bomb fame) returned after only three days with distressing news. BG Lindbergh reported that, "In general, people are not sufficiently experienced in their primary mission."[30] BG Tibbets was even more direct. "There isn't anybody out there [at SAC] that knows what the hell they are doing. The crews don't know how to fly an airplane. The staff officers don't know what they are doing."[31] Overall, the intensive cross-training program had "seriously interfered with training the primary mission" and resulted in such extremely low combat readiness as to have General Kenney replaced at SAC by General Curtis LeMay.[32] The applicable lesson learned from this example is to avoid "differentiation error" because "research indicates that the clear-cut and formal differentiation of organizational [functions], when based on significant task and environmental differences, contributes to good performance."[33] In the context of this overall discussion, avoiding differentiation error tends to support movement towards specialized, professionalized airborne communications expertise.

The second major concept is "modularity". At its most basic level, general systems theory "is an aspect of organizational analysis which is devoted to discovering organizational universals…using the elements and processes common to all systems as a starting point."[34] Modularity is a universal yet variable sub-characteristic of all systems. According to Dr Erik Jansen, Senior Lecturer in organizational theory at the Naval Post Graduate School, it is axiomatic in systems theory that effective modularity within any system rests on the extent of the standardization of the interfaces among disparate elements.

A very pertinent historical example of flawed modularity in joint airborne communications systems involves the lack of compatible interfaces among the radio equipment

possessed by the major force elements involved in Operation EAGLE CLAW, the failed attempt to rescue American hostages from Iran in 1980. New Satellite communications (SATCOM) radios were retrofitted on some of the C-130s and RH-53 helicopters just before their flight to the Desert One landing strip in Iran.[35] Lacking the proper training on their use, key mission leadership did not know that the systems on the C-130s could not directly communicate with the systems on board the helicopters. In one particularly critical instance the Desert One mission commander, Lt Col John Kyle, thought he had warned the helicopters about the dust storm they were to encounter, but he "didn't realize at the time that the two systems were incompatible and that [he] couldn't talk to [the lead helicopter] over the encoded SATCOM system."[36] In the context of the modularity requirements levied by the enduring strategic environment described previously, systems theory would proscribe an emphasis on standardizing the "interfaces" between modular force packages. In the context of this paper's main discussion, the AMSS embodies a standardized communications interface between AFSOF and all other joint and combined partners, and as such is a critical enabler of AFSOF's modularity at the tactical and operational levels.

The third major concept is "contingency theory". Contingency theory is a subset of overall organizational theory, and it posits that the best way to differentiate any given body of work is dependent on the environment in which that work is to be carried out.[37] In general, "organizations must vary if they are to cope effectively with different environmental circumstances."[38] In particular, "the state of differentiation [division of labor] in effective organizations [must be] consistent with the diversity of the external environment."[39] When applied to the previously discussed modularity requirements imposed by the strategic environment and the increasing technical complexity JTRS brings to the operational

environment, once again this principle tends to support movement towards specialized, professionalized airborne communications expertise.

In light of the three major organizational and systems design theory concepts above, it is now useful to look at three alternate courses of action that are being considered at various levels of the AFSOC staff to fill the command's requirements for tactical and operational airborne communications expertise. The most widely advocated approach is to divide responsibility for all airborne communications requirements among other crewmembers. This already occurs at the tactical level on board all active duty AFSOC airframes (except the MC-130P) where varying combinations of pilot, navigator/combat systems officer/electronic warfare officer, flight engineer, loadmaster, and sensor operator duties have been shifted in to the "care and feeding" of airborne communications network architecture.

On the tactical level, splitting duties among other crewmembers is problematic because it violates the principles of specialization and professionalization above and embodies "differentiation error" by in effect cross-training crewmembers into a different specialty. Although less extreme than in the historic example from SAC above, the fundamental organizational dynamics are the same in that significant initial and ongoing training in airborne communications systems detracts from crewmembers' primary duties in MDS employment. On the operational level, splitting responsibility between other crewmembers is problematic because it violates the contingency theory and modularity/standardized interface principles above by fielding a non-standardized, inconsistent product across the worldwide force based arbitrarily on the beddown locations of specific platforms. On the practical level, unlike in the haphazard splitting of duties among crewmembers in different platforms, the AMSS embodies a standardized communications expertise interface between AFSOF and joint/combined partners.

This standardized interface enhances AFSOF modularity in the strategic and operational environments discussed previously.

A second alternative approach to filling AFSOF's needs for airborne communications expertise is to cross-train AMSSs into other AFSOC aircrew specialties (Sensor Operator, Flight Engineer, Loadmaster) to retain nominal "Air Commando" airborne communications expertise in the command. Aside from violating the differentiation error principle above, this course of action has been rejected by the Air Force Personnel Center (AFPC). AFPC will not support cross-training of AMSSs to other aircrew specialties due to high demand for the AMSS skillset across the Air Force.[40] Bottom line: AFSOC must employ its current AMSS cadre within its current skillset or it will be reassigned to urgent needs outside the Command.

A third alternative approach to filling AFSOF's needs for airborne communications expertise involves shifting the AMSS cadre to other select AFSOC airframes (MC-130W and AC-130J) as the MC-130P draws down. This approach is problematic for the same reasons articulated above for splitting duties among other crewmembers. By covering the 27 SOW at Cannon, but nowhere else worldwide, it violates contingency theory/modularity and results in a continued inconsistent product AFSOF-wide.

How Should AFSOC's AMSS Cadre Be Organized and Employed? – PART 2

Having just articulated *how not to do it,* this section will more fully articulate *how to do it.* The above analysis proves that this paper's main proposal of re-defining and expanding the AMSS' role in AFSOC offers the only truly comprehensive solution to filling AFSOF's worldwide airborne communications requirements. Having AMSSs available "as needed" on the tactical level (to help crewmembers on select platforms avoid task saturation on particularly complex mission profiles) and "full time" on the operational level (to provide subject matter

expertise in staff and planning efforts) minimizes differentiation error, maximizes modularity, and therefore enhances mission effectiveness across the operational and strategic environments detailed previously.

AFSOF's standing worldwide concept plan (CONPLAN), crisis response element (CRE), geographic combatant command flexible deterrent option (FDO), and NATO Response Force requirements are so varied and involve such innumerable potential combinations of AFSOF platforms that having centrally managed specialists available that can swing to support the airborne communications needs of any given deployable element has considerable merit. If the AMSS cadre were centrally managed from Airborne Communications Flights within OSSs, then regardless of the composition of the force requested for any given requirement, adequate airborne communications expertise would be available for inclusion in the deploying modular force package. Just like with DSOs, these centrally managed "special teams players" need not fly on every platform, but can provide specialized support to all platforms and deployed C2 nodes. The strategic impact of this "re-packaged" AMSS capability resides in the tangible decrease in risk of mission failure it brings, particularly to no-notice/high-visibility IW missions.

Currently, AFSOC has 95 authorized AMSS manpower billets, and there are an additional 23 AETC billets in the 58 SOW at Kirtland AFB.[41] Of those currently in AFSOC, 8 billets are temporary special duty positions for the remotely piloted vehicle sensor operator program, 8 billets are already assigned in MAJCOM/wing/group staff functions at Hurlburt Field, and 54 are in the DATAMASK program.[42] Therefore, this proposal to re-classify MC-130P-specific line flying slots to group-level flying staff positions need apply only to the 25 billets that are currently assigned directly to line flying units (9/17/67 SOS). To maximize impact while remaining cost-neutral to the Command, these billets must first be allocated to

ensure AMSS representation in all MAJCOM/wing/group-level stan/eval, tactics, and plans shops throughout AFSOC. Stan/eval representation ensures a standardization mechanism, tactics representation ensures an integration mechanism, and plans representation ensures an interoperability mechanism across the entire Command. The remaining billets would be assigned to new Airborne Communications Flights in the OSSs at Hurlburt, Cannon, Kadena, and Mildenhall.

Summary

Urgent communications standardization, integration, and interoperability requirements flowing from an IW-focused strategic environment and a net-centric operational environment clearly demonstrate the need for dedicated airborne communications expertise throughout the AFSOF enterprise. This dedicated expertise is required for AFSOF to consistently field versatile, flexible, and responsive airpower able to universally plug-and-play with joint/combined SOF and GPF partners worldwide across the range of military operations envisioned in JCS, SOCOM, and sister service IW operating concepts. The AMSS skillset is a critical component in the modularity required for sustained AFSOF success in the enduring strategic and operational environments mentioned above. As currently fielded the AMSS has proven critical to success on complex, high-risk/high-reward AFSOF missions across the globe. Fundamental tenets of classic organizational and systems design theory, as well as historical examples from the birth of SAC and Operation EAGLE CLAW, solidly support AFSOC retaining the specialized, professionalized airborne communications expertise embodied by the AMSS.

This research proves the best overall solution to ensure AFSOF is postured for long-term success on no-fail IW missions is for AFSOC to re-define and expand the AMSS' role from one

of a simple "Radio Operator" tied to a specific platform to that of a centrally managed airborne mission information manager able to provide "as needed" tactical communications support aboard select AFSOF platforms, and "full time" standardized net-centric communications integration and interoperability expertise to all AFSOF deployable elements and HHQ staff agencies. None of the available alternatives (dividing responsibility among other crewmembers, cross-training AMSSs to other crew positions, or shifting AMSSs to other platforms) provide a comprehensive solution to AFSOF's long-term need for standardized subject matter expertise worldwide.

Rather than allow the active duty AMSS career field to exit the command in 2017 as an unintended byproduct of recapitalization, it is critical that AFSOC reorganize its AMSS cadre into DSO-style centrally controlled Airborne Communications Flights at Hurlburt, Cannon, Kadena, and Mildenhall to provide appropriate capability to all of its maneuver elements worldwide. Failure to re-define the AMSS' role in AFSOC (and thus losing dedicated airborne communications expertise altogether upon MC-130P retirement) has broad strategic impact measured in universally increased risk of failure on no-notice IW missions, including those involving national prestige.

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End Notes

(All notes appear in shortened form. For full details, see the appropriate entry in the bibliography)

[1] Mullen, *Capstone Concept for Joint Operations Version 3.0*, p 27.
[2] Gates, *Quadrennial Roles and Missions Review Report*, p 8.
[3] Ibid.
[4] Mullen, *Capstone Concept for Joint Operations Version 3.0*, p iii, 2.
[5] Ibid., p 27.
[6] Olson and Mattis, *Irregular Warfare Joint Operating Concept V2.0*. p 15.
[7] Ibid., p 34.
[8] Gates, *Quadrennial Roles and Missions Review Report*, p 6.
[9] Baddeley, "Filling the Ether", p 26.
[10] Jones, "Radio Revolution", p 40.
[11] Goodman, "Understanding Data Links", p 35.
[12] Baddeley, "Radio Activity", p 27.
[13] Krambeck, "MIDS JTRS poised to bring IP networking to the aerial tier", p 20.
[14] Bonck, E-mail to author 6 December 2010.
[15] Air Force Career Field Education and Training Plan, p 47.
[16] Ford, Staff Summary Sheet & Bullet Background Paper, 18 March 2010.
[17] Diehl, E-mail to author 6 Dec 2010.
[18] Ford, Staff Summary Sheet & Bullet Background Paper, 18 March 2010.
[19] Ibid.
[20] Ibid.
[21] Ibid.
[22] Lawrence & Lorsche, *Organization and Environment: Managing Differentiation and Integration*, p 213.
[23] Scott and Mitchell, *Organizational Theory: A Structural and Behavioral Analysis*, p 37.
[24] Lawrence & Lorsche, *Organization and Environment: Managing Differentiation and Integration*, p 213.
[25] Ibid.
[26] Daft, *Essentials of Organization Theory and Design, Fourth Edition*, p 18.
[27] Ibid., p 19.
[28] Grynkewich, "Advisable in the National Interest: The Relief of General George C. Kenney", p 4
[29] Ibid., p 1.
[30] Borowski, *A Hollow Threat: Strategic Air Power and Containment before Korea*, p 146.
[31] Grynkewich, "Advisable in the National Interest: The Relief of General George Kenney", p 2.
[32] Ibid., p 4
[33] Lawrence & Lorsche, *Organization and Environment: Managing Differentiation and Integration*, p 213.
[34] Scott and Mitchell, *Organizational Theory: A Structural and Behavioral Analysis*, p 53.
[35] Kyle, *The Guts to Try*, p 251.
[36] Ibid., p 252.
[37] Lawrence & Lorsche, *Organization and Environment: Managing Differentiation and Integration*, p 157.
[38] Ibid., p 187.
[39] Ibid., p 157.
[40] Ford, E-mail to author 24 August 2010.
[41] Ford, Staff Summary Sheet & Bullet Background Paper, 18 March 2010.
[42] Ibid.